

February 1966

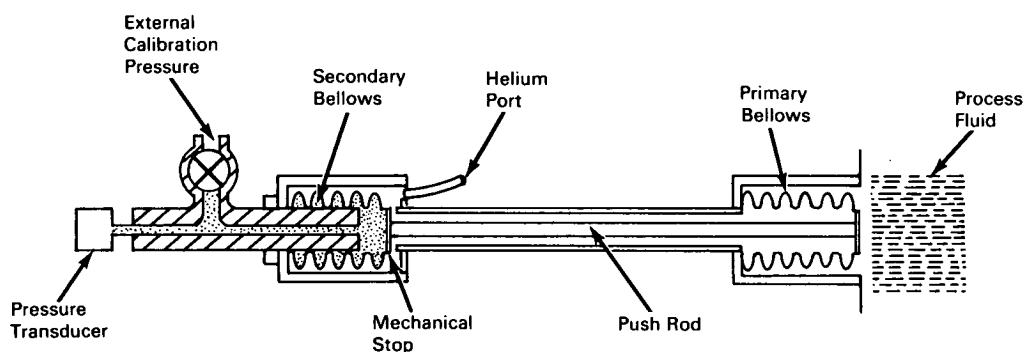
Brief 66-10064

NASA TECH BRIEF



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Transmission System Isolates Pressure Transducer from Severe Environment



The problem:

Measuring the pressure of a high-temperature, chemically active fluid. The measuring system must provide for in-place calibration of the pressure transducer, without requiring disconnection of any of the components.

The solution:

A pressure transmission system that isolates the pressure transducer from the process fluid.

How it's done:

The transmission system consists of two bellows connected by a pushrod. Pressure on the bellows which is exposed to the process fluid is transmitted through the pushrod to the second bellows, which operates the pressure transducer. A mechanical stop is provided on the second bellows to isolate the system pressure when the transducer is calibrated in place. A valve between the second bellows and the transducer permits an external calibration pressure to be admitted for calibration.

The space between each of the bellows and the pushrod can be filled with helium to provide greater

thermal isolation between the process fluid and the transducer. The helium will also allow a suitable internal pressure to be maintained to reduce the differential pressure on the bellows. The use of helium for the latter purpose would be particularly advantageous when the process fluid is at a relatively high pressure.

Note:

Inquiries concerning this innovation may be directed to:

Technology Utilization Officer
Western Operations Office
150 Pico Boulevard
Santa Monica, California, 90406
Reference: B66-10064

Patent status:

No patent action is contemplated by NASA.

Source: Space-General Corporation
under contract to
Western Operations Office
(WOO-239)

Category 01